

A Vision for Washington's Electricity Future

Washington and the Northwest are blessed with unique assets that provide a sound foundation for achieving a sustainable electricity future. A world-renowned hydro-based generation system, the Bonneville Power Administration (BPA) has a unique role as the region's largest provider of electricity generation and transmission while supporting a broad range of public purpose activities. Other institutions encourage collaboration and regional planning.

Governor Locke's 2002 Executive Order 02-03, *Sustainable Practices by State Agencies*, underscores Washington's commitment to sustainable practices. The state supports the mutually compatible goals of economic vitality, a healthy environment, and strong communities.

The directions outlined in this update of the State Energy Strategy (SES) provide some of the near-term approaches for sustaining and improving our electricity system. They include:

- ♦ Creating and supporting resource-planning processes that ensure adequate supplies.
- ♦ Strengthening the Northwest's renewable based system.
- ♦ Considering the risks of different resources and reducing exposure to fuel price volatility.
- ♦ Minimizing exposure to future environmental mitigation costs such as air emission charges.
- ♦ Balancing a portfolio of resources to minimize power supply disruption.
- ♦ Considering supply and demand management opportunities.
- ♦ Optimizing the performance of the transmission and distribution system.

- ♦ Assessing how risks and costs should be shared among stakeholders in order to best ensure consistent and sustainable investment in the electricity system infrastructure.

Vision Statement

A sustainable electricity power system is one that meets the needs of Washington's current residents, businesses, industries, and institutions without compromising the ability of future generations to meet their own needs. It is based on a balanced approach that provides adequate, reliable and affordable electricity services by making efficient use of electricity resources, supporting environmental stewardship, and promoting social equity.

Guiding Principles

Introduction

The 1993 SES began with a set of guiding principles developed by the Energy Strategy Committee. The 1993 SES addressed all aspects of state energy use from electricity to transportation, while the current strategy focuses almost exclusively on electricity issues. Although many of those guiding principles remain relevant, the Washington State Department of Community, Trade and Economic Development (CTED) asked the 2002 SES Advisory Committee to revisit them in light of the major changes in the electricity landscape since the 1993 SES. The guiding principles (set forth below in bold type) represent a general consensus by the members of the advisory committee. The principles range from relatively general statements of direction for state electricity/energy policy to fairly specific statements on electricity issues of particular importance to Washington. CTED Energy Policy staff produced and SES Committee members reviewed the narrative following each principle.

Guiding Principle #1

Encourage all load-serving entities to adopt and implement integrated resource plans to ensure they have adequate resources to meet their obligation to serve their customers' projected long term energy and capacity needs.

During the latter half of the 1990s many states began to investigate whether to shift their electrical systems from a regulated monopoly-based utility system in which consumers receive electricity service from a single utility provider, to a retail open access structure, which would allow consumers to choose their electricity provider. This process is often referred to as electricity deregulation or restructuring. Several western states - notably California, Oregon, and Montana - chose to adopt some level of open retail access. Washington State chose not to move in that direction and, in light of the California restructuring debacle, it is unlikely to do so in the foreseeable future. Consequently, load-serving utilities with an explicit obligation to serve all customer loads will remain the predominant providers of electricity for Washington consumers.

The Pacific Northwest states have a long history of using integrated resource plans (IRP) and tools as a basis for utility resource and planning decisions. The federal 1990 Northwest Power Act helped to establish the IRP approach and the Northwest Power Planning Council (NWPPC) has used IRP as a key element in its regional electricity planning process. Many consumer-owned utilities have depended on IRP as their principal planning tool. In addition, the Washington Utilities and Transportation Commission requires that its regulated utilities regularly develop and adopt integrated resource plans. (WAC 480-100-238: Least cost planning.)

The primary purposes of this principle are to:

- ◆ Reaffirm the continued predominance of load-serving utilities as the state's electricity service model;
- ◆ Underscore the continuing obligation that the state's utilities have to serve their customers' load requirements and to acquire the resources necessary to do so;
- ◆ Recognize that current and future electricity markets are likely to experience greater price volatility, and supply risk than has historically occurred prior to 2000;
- ◆ Acknowledge that integrated resource planning provides the best general method for utilities to ensure that they can serve their customers' current and future needs; and
- ◆ Recognize that, because of market volatility, integrated resource plans and their implementation will need to be changed as circumstances dictate.

Guiding Principle #2

Encourage the development of a balanced, cost-effective and environmentally sound resource portfolio that includes conservation, renewables (e.g., wind, geothermal, hydro, biomass, and solar technologies), and least-cost conventional resources.

This principle expands on the concepts set forth in principle #1 by focusing both on the types of new resources that should be developed and the underlying principles of integrated resource planning. If we expect Washington utilities to acquire the resources they need, we also expect them to do so in the most environmentally sensitive and cost-effective manner possible. While conservation is the resource of choice, there is not sufficient cost-effective conservation to meet all of the region's needs. Similarly, although many renewable resources (such as wind power) are often cost competitive with gas-fired combustion turbines when federal subsidies and risk mitigation factors are included, it is not clear that the region can rely upon renewables to cost-effectively meet our need for new resources. Therefore, a balanced portfolio of cost-effective conservation, renewables, and fossil-fuel generation will be needed to meet our increasing electricity loads. Section 4(e)(1) of the federal Northwest Electric Power and Conservation Act of 1980 creates a template for BPA to follow when acquiring resources. It states that, of the cost-effective resources available, "priority shall be given: first, to conservation; second, to renewable resources; third, to generating resources

utilizing waste heat or generating resources of high fuel conversion efficiency; and fourth, to all other resources.” Over the years, there has been vigorous discussion about whether this template should be extended to all load-serving entities in the region. Whether or not utilities follow this prioritization, integrated resources plans by utilities, along with the NWPPC’s Regional Power Plan, should enable utilities to meet local and regional needs in the least risky, most cost-effective, and most environmentally sensitive manner possible.

[For further information, see questions # 2, 14, 17, and 18 in Section 4.]

Guiding Principle #3

Protect the benefits to Washington consumers from the Federal Columbia River Power and Transmission System (FCRPS).

This principle acknowledges that Washington State and the Pacific Northwest have received considerable benefits from the presence of the Federal Columbia River Power and Transmission System (FCRPS). Electricity prices in the Northwest have historically been among the lowest in the United States, in large part due to the preeminent role of the federal hydroelectric and transmission system in the region. BPA supplies approximately half of the region’s electricity and Washington buys half of BPA’s output. When BPA, which markets the power from the federal dams, raised its wholesale rates last year in response to the drought and electricity crisis of 2000-01, the shock was felt throughout the region and especially in Washington. It is very much in the interest of Washington consumers for BPA to be financially healthy and to be able to supply power at a low cost over the long run.

Washington’s access to the FCRPS cannot be taken for granted. For example, in recent years, the Midwest/Northeast Alliance has attempted to dilute those benefits through calls for market-based rates and privatization of BPA. It is also in Washington’s interest to work with all other stakeholders in the region to allocate the output of the federal system through long-term contracts in a manner that is fair to all consumers in the region and

respects the “preference rights” of consumer-owned utilities. This will ensure that both BPA and the region’s utilities can plan for their responsibilities within a relatively stable framework. It is in the state’s interest to encourage a policy framework that acknowledges BPA’s unique ability to provide regional leadership in energy planning, management of electricity resources, and environmental stewardship.

Northwest consumers of electricity have paid off the debt of the federal hydroelectricity system since its inception. Although they are not the owners of the system, they are the payers of the mortgage. State policy should protect the benefits of the FCRPS for Northwest consumers who have for 50 years proven themselves to be worthy stewards of the system.

Guiding Principle #4

Preserve and promote Washington’s cost-based energy system to benefit the end use consumer by providing reliable power and reduce consumers’ vulnerability to supply shortage and price volatility. At the same time, the state should promote policies that harness market forces in the wholesale energy market to reduce customer costs and increase reliability while protecting the environment.

This principle acknowledges that the 2000-01 electricity crisis resulted in major disruption to the state’s citizens and economy, higher electricity prices, negative impacts on business and industry, more residential shutoffs, and a more volatile market. It focuses on two aspects of the electricity system – retail service to homes, businesses, and industry, and wholesale markets that directly serve utilities and some large industrial customers.

Since the 1993 SES, the electricity landscape has changed significantly. Beginning with the Energy Policy Act of 1992, the federal government set in motion a major change in the wholesale electricity market. The Act required that the transmission system be opened up to wholesale sellers of electricity including independent power producers. As noted in the discussion of Principle #1, some

states chose to respond to this change in federal law by restructuring their electricity systems, separating ownership of distribution systems from generation, and allowing some or all consumers to buy power from suppliers other than their own local utility. These changes in state law have resulted in a greater role for market forces throughout the western United States. There is still considerable debate over the extent to which the specific restructuring path taken in California contributed to the electricity crisis of 2000-01 and the extent to which the greater reliance on energy markets in general contributed to the crisis. Washington continues to be extremely cautious about increasing its reliance on market forces to provide for its electricity supply.

While we assume that the current regulated and public utility structure will remain the model for the foreseeable future in Washington, wholesale markets will continue to have a role in electricity generation and transmission. While retail access to the electricity market will likely be limited to large industrial customers of some utilities, the main question for Washington is the extent to which our load-serving utilities rely on market purchases or their own resources to serve their loads. State policy should capture the benefits of wholesale competition without subjecting consumers to the risk of volatility and uncertainty that fully deregulated electricity markets tend to exhibit. It should provide for clear responsibility for risks, contingency planning (such as demand response), and good market oversight. Washington must maintain its market model that ensures the viability of independent power producers in a capital limited, low-priced wholesale electricity market, while, at the same time, resisting the attempts by the Federal Energy Regulatory Commission (FERC) to impose its vision of the future on the Northwest.

[For further information, see question #4, Section 4.]

Guiding Principle #5

Encourage utilities, BPA and others as they work to reduce congestion and improve the reliability of the transmission system, to assess all potentially

practicable and cost-effective alternatives, including but not limited to targeted demand reductions, generation additions, system upgrades, and new line construction.

This principle focuses on a critically important issue for the electricity future of the state and region. BPA controls and operates the vast majority of the region's electricity transmission facilities. Because BPA has such a dominant position in the region's high voltage transmission system, its decisions on system upgrades and transmission alternatives will dominate the future direction of transmission.

The Northwest and the rest of the nation have both experienced significant increases in the use of the electricity transmission grid over the last several years. These increases, coupled with limited major transmission upgrades over the last 15 years, have resulted in growing concerns about line congestion, access to transmission services, and system reliability. There are now underway two proposed responses to these problems.

One is a complete reform of the governance of the transmission system. FERC is advancing this governance reform effort by pushing for regional transmission organizations (RTO) to be created throughout the country, which according to FERC's vision, are designed to oversee an orderly expansion of the transmission system and to develop a fair and rational market for transmission services. Because it is not clear whether this policy is in the interests of the electricity consumers of Washington, and state officials have expressed concerns about the formation of a Northwest RTO.

The other response to transmission problems is to address, regardless of the ultimate governance structure, the necessity for expansion of the system, the careful study of whether alternative siting of generation (including distributed generation) will replace the need for more transmission and vice-versa, and whether the need for both new transmission and generation can be avoided altogether through reduction of central generation by conservation, efficiency, and demand management. These policy objectives can be achieved either through the current governance structure of the

transmission system (e.g., congressional approval of borrowing authority for BPA so BPA can finance transmission additions, or through an RTO framework). Washington's challenge is to determine how to achieve these policy objectives, in the face of political and jurisdictional struggles over governance, in a manner that most benefits the public at large.

[For further information, see question #15, Section 4.]

Guiding Principle #6

Foster a predictable and stable investment climate to facilitate adequate and efficient access to capital markets for independent power producers, federal agencies and Washington's public and private energy industry.

Electricity system investments, be they in generation, distribution, transmission, or energy efficiency, are by their very nature capital intensive. Consequently, access to capital markets is critical to the future viability of the state's electricity system. Capital availability for electricity system investment tightened considerably in 2001 and 2002. On the federal level, BPA has begun to approach the limits of its federal borrowing authority, a situation that could make it very difficult for the region to upgrade and expand its transmission system. Increased wholesale power costs, decline in demand, and the collapse of the wholesale spot market have threatened both public and private utilities' ability to borrow and caused their credit ratings to suffer. In the wake of the Enron collapse, the financial position of independent power producers is extremely precarious. Liquidity in the wholesale energy markets has also suffered, limiting their potential to provide products and services, such as hedging instruments, to utilities.

While the state cannot by itself resolve issues relating to capital availability for the acquisition of new energy infrastructure and efficiency improvements, it can play a constructive role. Some state activities might include:

- ♦ Public officials should continue to convey to capital markets that Washington's investor-owned utilities are being regulated in a manner that facilitates

timely and economic recovery of prudent capital investments.

- ♦ Urge borrowing authority for BPA.
- ♦ Resist regulatory initiatives such as FERC's Standard Market Design (SMD) proposal that undermine the benefits of the Pacific Northwest's low-cost, publicly governed and well-regulated system.

[For further information, see question #9, Section 4.]

Guiding Principle #7

Promote Washington State as a leader in clean energy technologies by supporting and attracting companies that are active in developing, manufacturing and selling these technologies. In addition, lead by example with clean energy, energy efficiency, and sustainable practices in state and local government operations.

This is a two-part principle that addresses the state's targeted economic development strategies and the role of state and local governments as both marketplace and modeler of sustainable practices.

Supporting the Clean Energy Industry

In 1997 CTED commissioned a study to determine the extent of the renewable energy and energy efficiency industry in Washington (*The Next Generation of Energy: the Renewable Energy and Energy Efficiency Industries in Washington State*). That study concluded that Washington's nearly billion-dollar clean energy industry is roughly comparable in size to the state's wholesale apple industry. A second study showed that future markets for advanced energy technologies such as fuel cells, solar photovoltaics, and wind, as well as energy efficiency have great potential for the state of Washington. (See Climate Solutions Report: *Poised for Profit: How Clean Energy Can Power the Next High-Tech Job Surge in the Northwest*). Consequently, the Locke administration has chosen the clean energy industry as one of four business development focus areas. CTED is already using the resources of its Energy Policy, Economic Development, and Trade Divisions to maintain and build the clean energy industry. There are existing state programs, such as the Rural

Economic Development Fund, that have been effective in accomplishing these goals.

Sustainable Government

In September 2002, Governor Locke issued Executive Order 02-03 *Sustainable Practices by State Agencies*, which directed state government to serve as an exemplar for sustainable practices. The order requires each executive branch agency to develop a sustainability implementation plan. Agencies are encouraged to minimize energy and water use and shift to clean energy for both facilities and vehicles.

State and local governments are an important market for energy conservation products and renewable energy. The implementation of sustainable practices by state and local governments will help develop an important market for clean energy goods and services.

The state has already adopted several policies that assist the development of the clean energy industry. These include small scale net metering; sales tax exemptions for wind, solar, small hydro power projects, and fuel cells; green tariff requirements for large utilities, and the rural economic development fund for small utilities. Several of these incentives will come up for review by the legislature in future sessions. The state should investigate their effectiveness and determine the need for continued support.

[For further information see:

- *The Next Generation of Energy: the Renewable Energy and Energy Efficiency Industries in Washington State*
<http://www.energy.cted.wa.gov/ECONWReport/>
- *Poised for Profit: How Clean Energy Can Power the Next High-Tech Job Surge in the Northwest*
<http://www.climatesolutions.org>
- *Sustainable Practices by State Agencies.*
<http://www.governor.wa.gov/eo/eo%5F02%2D03/>

Guiding Principle #8

Use data and analysis based on sound scientific and economic principles to inform energy policy.

This principle is self-explanatory. It recognizes that both scientific and economic analyses are integral components of any carefully developed energy policy. The

analytical work of the NWPPC – which includes evaluation of electricity demand and supply balances, projections of energy resource costs, environmental assessment, and conservation resource estimation – is a prime example of scientific and economic analyses and data in energy policy development. The state of Washington depends significantly on the work of the NWPPC, especially its periodic regional power plans. For this update of the SES, we have used the NWPPC's draft materials developed for its 2002-03 Fifth Power Plan.

[For further information, see NWPPC Fifth Power Plan materials
<http://www.nwcouncil.org/energy/powerplan/>]

Guiding Principle #9

Evaluate energy policies by how well they improve the safety, security, and reliability of the system.

The purpose of this principle is to acknowledge the added importance of energy security issues in the state's energy policy considerations. The events of September 11, 2001, have led to an increased emphasis on infrastructure security issues. Electrical and energy systems are key elements of those security concerns. Maintaining the safety, security, and reliability of energy systems is vital to a functional society.

Energy emergency planning and response are not a new activity for either CTED or state government. CTED has explicit statutory responsibilities to plan for and respond to energy emergencies (RCW 43.21G) and regularly works with the energy industry and all levels of government on these issues. The terrorist attacks have added a new dimension to those responsibilities. The Governor's Domestic Security Executive Group is charged with developing a comprehensive plan to address terrorism concerns in the state. CTED chairs a subcommittee that is focusing on utility infrastructure issues.

This increased emphasis on security relates directly to ongoing concerns about system reliability. Electricity policy makers and planners need to ensure that the lights stay on during droughts, ice storms and transmission failures. Thus, when determining how best to secure the state's transmission and

generation needs, policy makers must consider how each proposed solution affects the reliability of the entire electricity system.

[For further information, see:

- The Washington Utilities and Transportation Commission report, *Washington Electric Utility Service Quality, Reliability, Disclosure and Cost Report, December, 1998*, available at: <http://www.wutc.wa.gov>

Guiding Principle #10

Educate the public on energy issues.

The electricity crisis of 2000-01 resulted in nearly unprecedented citizen and media focus on electricity and energy issues. The crisis forced Washington citizens and businesses to recognize that electricity, a commodity that many tend to take for granted, was a vital part of our state's economic well – being. The challenge ahead for the state and the electricity industry is to maintain and increase this level of awareness. Energy and electricity issues are inherently complex, involving topics as diverse as resource economics, energy technology, finance, environmental assessment, and governmental structure.

There are many training, education, and technical assistance resources available in Washington that address specific areas ranging from energy courses for building operators to industrial sector energy hotlines.

Some of the electricity education areas that should be considered are:

- ◆ How does the electricity system work?
- ◆ What are the relationships between electricity supply and demand?
- ◆ What actions can individuals, businesses, and industries take to influence electricity demand and usage?
- ◆ What are the key characteristics and issues related to new generation technologies, (costs, location constraints, environmental impacts, capital needs, etc.)?
- ◆ Who has responsibility and authority for energy decisions? - Government and at what level – local, state, regional, or national? Private sector – businesses, industries, energy companies, independent power producers, finance community?

To begin this education effort, CTED will use the update of the SES to speak with civic, business, and community groups. This will provide an opportunity to update individuals on the electricity landscape and to obtain comments and suggestions on electricity issues and policies.

Guiding Principle #11

Actively engage with nearby states, provinces, tribes, and the federal government to help accomplish common energy goals.

Washington's electricity and energy systems do not exist in isolation. They are tied to those in the western U.S. and western Canada through an extensive series of transmission lines. Despite our abundance of hydroelectric generation within the state's border, some of its electricity and the vast majority of its other energy resources come from out of state. With the exception of the Centralia coal mine, Washington possesses no significant fossil fuel resources and is dependent on imports from Alaska for most of its petroleum and on Canada and the Rocky Mountain region for its natural gas supplies. Electricity moves throughout the Northwest, from coal-fired plants in the Rocky Mountain region, and from seasonal exchanges with California and the Southwest.

The federal government plays a major role in Washington's electricity system. The Army Corps of Engineers and the Bureau of Reclamation own and operate many of the region's largest hydroelectric dams, and BPA owns nearly three quarters of the region's transmission assets. At the federal level, efforts are underway to pass the most significant energy legislation since 1992. FERC regulates the interstate transmission system and is pushing hard to expand its control through creation of RTOs and promulgation of a SMD for the nation's grid.

Consequently, it is critical that Washington continue to work cooperatively with regional governmental, quasi-governmental, and private organizations.

Key regional electricity institutions include the four-state NWPPC, the Western Governors Association (WGA), and its energy

organizations – the Western Interstate Energy Board (WIEB) and the Committee on Regional Electric Power Cooperation (CREPC), as well as other specialized groups such as interstate utility organizations, electricity security coordinators, and regional reliability councils.

Washington State faces a challenge to balance state-specific interests with regional ones. This balancing effort is more important as both the structure of the electricity system remains clouded and governmental roles and responsibilities are in dispute. For example, will a northwest RTO be created? If so, when and in what final form? How does the region deal with interstate transmission issues in the interim? What role will the state and federal government play in regulating the transmission system? These are some of the questions that our state energy policymakers will have to consider over the next several years.

[For further information, see question #3, Section 4 and Appendix B.]

Guiding Principle #12

Promote policies and programs that provide access to basic energy services to those on limited incomes.

Low-income individuals spend pay a higher proportion of their income on energy services. For nearly three decades the federal government has provided energy support to low-income populations through programs such as the Low-Income Home Energy Assistance Program (LIHEAP) and Weatherization. In addition, many utilities offer weatherization programs, discounted rates, financial assistance, or other services to their low-income customers.

In 2001, Washington State appropriated \$1 million for low-income energy assistance state funding for weatherization. Nonetheless, the need for both bill assistance and weatherization services far outstrips state, utilities, or federal resources. Often less than one-quarter of the eligible population can be served. This disparity between need and available resources grew worse in 2001-2002 as increases in electricity and natural gas rates more than offset recent increases in federal, state, and utility support. Current

budget shortfalls mean that the state will have few resources available for additional assistance.

Some other actions that the state and utilities can do include:

- ◆ Continue to urge our congressional delegation to support increased federal funding for LIHEAP and weatherization;
- ◆ Encourage citizens to support Energy Matchmakers, a program that matches individual contributions with utility funds;
- ◆ Consider innovative utility assistance programs.
- ◆ Analyze the costs of bill arrearages and utility shutoffs and the potential financial benefits of support programs.

[For further information see, question #8, Section 4, and Appendix A.]

Guiding Principle #13

Promote energy policies that maintain and or improve environmental quality.

It is widely acknowledged that the production and use of energy and electricity can have significant environmental impacts. The 1993 Energy Strategy emphasized this by noting, "[e]nvironmental problems and their solutions are closely tied to how we develop and use energy" (p. 33). CTED energy policy statutes specifically require that the development and use of energy resources shall be consistent with the statutory environmental policies of the state (RCW 43.21F.015 (3)). In addition, Governor Locke has established environmental improvement as one of his priority focus areas.

The scope of energy/electricity and environmental issues is vast, including:

- ◆ climate warming;
- ◆ air pollution;
- ◆ water supply;
- ◆ water quality;
- ◆ habitat for fish and wildlife; and
- ◆ implementation of environmental laws.

Washington has made important progress in many of these areas by doing the following:

- ◆ Developing siting standards for emergency generation that has reduced the use of the

most polluting sources such as diesel generators and single cycle turbines.

- ◆ Promoting renewable energy through net metering, fuel mix disclosure, green option tariffs, and tax exemptions for wind and solar.
- ◆ Acquiring conservation resources by working with regional organizations such as BPA, the Norwest Energy Efficiency Alliance, and the NWPPC, and by specific state policies such as progressive building codes.

Perhaps the most significant environmental issue for energy production and use is the emissions of greenhouse gases (chiefly carbon dioxide) and the resulting climate change impacts. Most human-caused greenhouse gas emissions come from energy production and use. There is now broad scientific agreement that global warming is occurring. The Intergovernmental Panel of Climate Change concluded in 2001 there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activity. The challenge for Washington is to find ways to reduce overall greenhouse gas emissions in general. More specific to the electricity sector, Washington faces the challenge of increased emissions as it moves more to fossil fueled facilities (principally natural gas) to meet its increased electricity demand. In the Pacific Northwest, changes in precipitation patterns due to global warming may affect the seasonal availability of hydropower.

Some of the key issues that will be considered by state and regional energy policy makers include:

- ◆ the scope of mitigation of greenhouse gas emissions, especially related to power plants;
- ◆ fish and wildlife impacts of hydroelectric operation, mitigation requirements, and impacts on electricity supply;
- ◆ local energy facility siting and land use considerations for technologies such as transmission lines and renewable energy projects; and
- ◆ development of specific standards for state power plant siting through the

Energy Facility Site Evaluation Council (EFSEC).

[For further information, see question #16, Section 4 and Governor Locke's website www.governor.wa.gov, "Protecting Natural Resources."]